

# FREEDOM 43

43 M TWIN SCREW MOTOR YACHT

## OUTLINE TECHNICAL SPECIFICATION



Rev. Index	Date	Prepared by	Notes
00	2023.10.18	FR	First issue for comments

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**MAIN DIMENSIONS**

Length, overall	ab.	43.00	[m]
Length, waterline at full load draught	ab.	41.90	[m]
Length, between perpendiculars	ab.	40.80	[m]
Beam, max (hull, moulded)	ab.	8.50	[m]
Beam, overall	ab.	8.80	[m]
Draught, full load (ab. B.L.)	ab.	2.25	[m]
Draught, scantling (ab. B.L.)	ab.	2.40	[m]
Depth	ab.	4.15	[m]
Displacement, full load	ab.	275	[t]
Max Rated Power for propulsion (each engine)	ab.	1932	[kW]
Max Speed (at half loaded Displacement & 100% max rated power)	ab.	22.0	[kn]
Cruising Speed (at half loaded Displacement & 85% max rated power)	ab.	20.0	[kn]
Economic Speed (at half loaded Displacement)	ab.	11.0	[kn]
Range (at Economic Speed)	ab.	>4000	[nm]
Number of decks		4	
Gross tonnage	ab.	400	GT

**TANK CAPACITIES**

Fuel oil tanks	ab.	35'000	[lt]
Fresh water tanks	ab.	8'000	[lt]
Black and grey water tanks	ab.	3'000	[lt]
Sewage tank	ab.	750	[lt]

**CONSTRUCTION**

<b>Hull &amp; Superstructure material:</b>	Aluminium alloy AA5083 H321	plates
	Aluminium alloy 6082 T6	extruded stiffeners
	Aluminium alloy 6082 T6	large extrusions on decks and sides

The metal structure design shall be carried out in accordance with the requirements of the Classification Society and, where necessary, with the use of direct calculations, according to Builder's experience.

All scantlings will be as shown on the midship section and/or scantling plans, as approved by the Classification Society.

**PROPULSION SYSTEM**

The main propulsion system will be composed of two diesel engines coupled to shaft lines with FP propellers through reduction gearboxes.

**GENERATING PLANT**

N.2 diesel generating sets – fixed speed to be installed with the following power:

- 2 x Kohler 70 EFOZDJ 70 kWe @ 0.8 pf - 440V 50Hz 3ph

Final size and partition shall be determined after completion of electric load analysis.

**CLASSIFICATION**

The Yacht will be built in accordance with the RINA Rules for Pleasure Yachts in force at the date of the Agreement and will obtain the following class notation:

**C ✳ HULL • MACH Ych Unrestricted Navigation**

**REGISTRATION**

The Motor Yacht shall be registered under the Flag as set out in the Agreement.

Flag: Red Ensign Group

Home Port: [tbd]

**BETWEEN DECK HEIGHTS AND FREE HEIGHTS**

Moulded between deck heights will be generally as follows (and in any case sufficient to provide clear heights listed hereinafter):

	<b>Position</b>	<b>Between Deck Heights (interior decks)</b>
1-2	Lower Deck to Main Deck	ab. 2450 [mm]
2-3	Main Deck to Upper Deck	ab. 2500 [mm]
3-4	Upper Deck to Sun Deck	ab. 2450 [mm]

Generally, the following maximum clear heights will be obtained in Owner/Guests and crew living areas:

Position	Clear Heights (interior decks)
between Deck 1 – 2	abt. 2100 [mm]
between Deck 2 – 3	abt. 2150 [mm]
between Deck 3 – 4	abt. 2100 [mm]

Clear height to be considered as the height from the upper side of the finished floor covering to the underside of the normal ceiling (assumed max thickness for finished ceiling 15 mm).

#### **BOW THRUSTER**

One tunnel bow thruster shall be installed at bow, having an output power of min. 55 kW, but anyway enough for 30 kn transversal design wind.

#### **STABILIZERS SYSTEM**

One set of fixed electric stabilizer fins (CMC, Naiad or equivalent) designed to provide active roll reduction both in underway and 'at anchor' condition (zero speed) will be installed.

#### **GANGWAY**

One (1) electro-hydraulic telescopic retractable stern gangway, maker Sanguineti or equivalent, will be fitted at transom under the main deck, as shown on G.A. plan; extended total length of abt. 4.5 m, walkway width of minimum 500 mm, with removable polished stainless steel Aisi 316L stanchions and rails.

The unit will be capable of slewing 55° starboard and 35° port and elevating when extended (+ 20° up/ -20° down angle).

#### **SWIMMING PLATFORM**

One (1) electro-hydraulic swimming platform, maker Sanguineti or equivalent, arranged on fixed swimming platform at transom as per GAP. Platform dimensions as per GAP.

#### **WATER MAKERS**

One reverse osmosis water maker model Idromar MC2 Duplex of 6.24 t/day each at 25°C sea water temperature.

#### **FUEL OIL PURIFICATION SYSTEM**

Two centrifugal type self-cleaning fuel separators Alfa Laval mod. MIB 303, capacity 630 l/h each.

**AIR CONDITIONING SYSTEM**

The air conditioning system will be a mixed system (fancoils plus fresh air units) all over the Yacht, min 360'000 BTUs, maker Frigomar or equivalent.

The external temperature, seawater temperature and relative humidity to be taken into account to design the air conditioning plant will be the following:

EXTERNAL TEMPERATURE	EXTERNAL R.H.	SEA WATER TEMPERATURE	INTERNAL TEMPERATURE	INTERNAL RELATIVE HUMIDITY
<b>SUMMER</b>				
+ 35 °C	90 %	+32 °C	+ 21 °C	50 %
<b>WINTER</b>				
-4 °C	-	+4 °C	+ 23 °C	Min 35 %

**NOISE AND VIBRATION**

**Noise targets**

<b>Noise limits in different Yacht's operating conditions – dB(A)</b>			
Area	Deck	TRANSIT @ cruising speed	HARBOUR
Guest cabins	LD	62 dB (A)	48 dB (A)
Main deck saloon	MD	62 dB (A)	48 dB (A)
Owner's cabin	UD	52 dB (A)	46 dB (A)
Wheelhouse	UD	52 dB (A)	46 dB (A)
Dining area	MD	52 dB (A)	46 dB (A)
Crew mess	MD	54 dB (A)	48 dB (A)
Crew cabins	LD	56 dB (A)	48 dB (A)

Noise levels in all the sanitary spaces and dressing rooms located in or adjacent to the above-mentioned areas shall not be more than 2 dB above the stated level of the corresponding area.

**Acoustic privacy targets**

Acoustic privacy must be intended as the sound attenuation value between two separate spaces. Following minimum cabin to cabin acoustic privacy levels, subject to a tolerance of – 2 dB, shall be met:

- Between Owner and guests' cabins: 44 dB
- Between Crew cabins: 38 dB

## Vibrations targets

Levels of structural vibrations are to be interpreted in accordance with ISO 6954:2000.

<b>VIBRATION LIMITS at cruising speed</b>		
	<b>BELOW 6 Hz</b> Units: acceleration 0-peak cf=1	<b>ABOVE 6 Hz</b> Units: Velocity 0-peak cf=1
Owner's cabin/VIP cabin	113 mm/s <sup>2</sup>	1.5 mm/s
Main saloon	113 mm/s <sup>2</sup>	1.5 mm/s
Dining	113 mm/s <sup>2</sup>	1.5 mm/s
Guest cabins	113 mm/s <sup>2</sup>	1.5 mm/s
Crew Mess	113 mm/s <sup>2</sup>	1.5 mm/s
Bridge	113 mm/s <sup>2</sup>	1.5 mm/s